

OPERATING SUMMARY

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W38  
1973  
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GEORGETOWN

WATER POLLUTION CONTROL PLANT

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GEORGETOWN  
WATER POLLUTION CONTROL PLANT

operated for

THE TOWN OF GEORGETOWN

by the

MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY

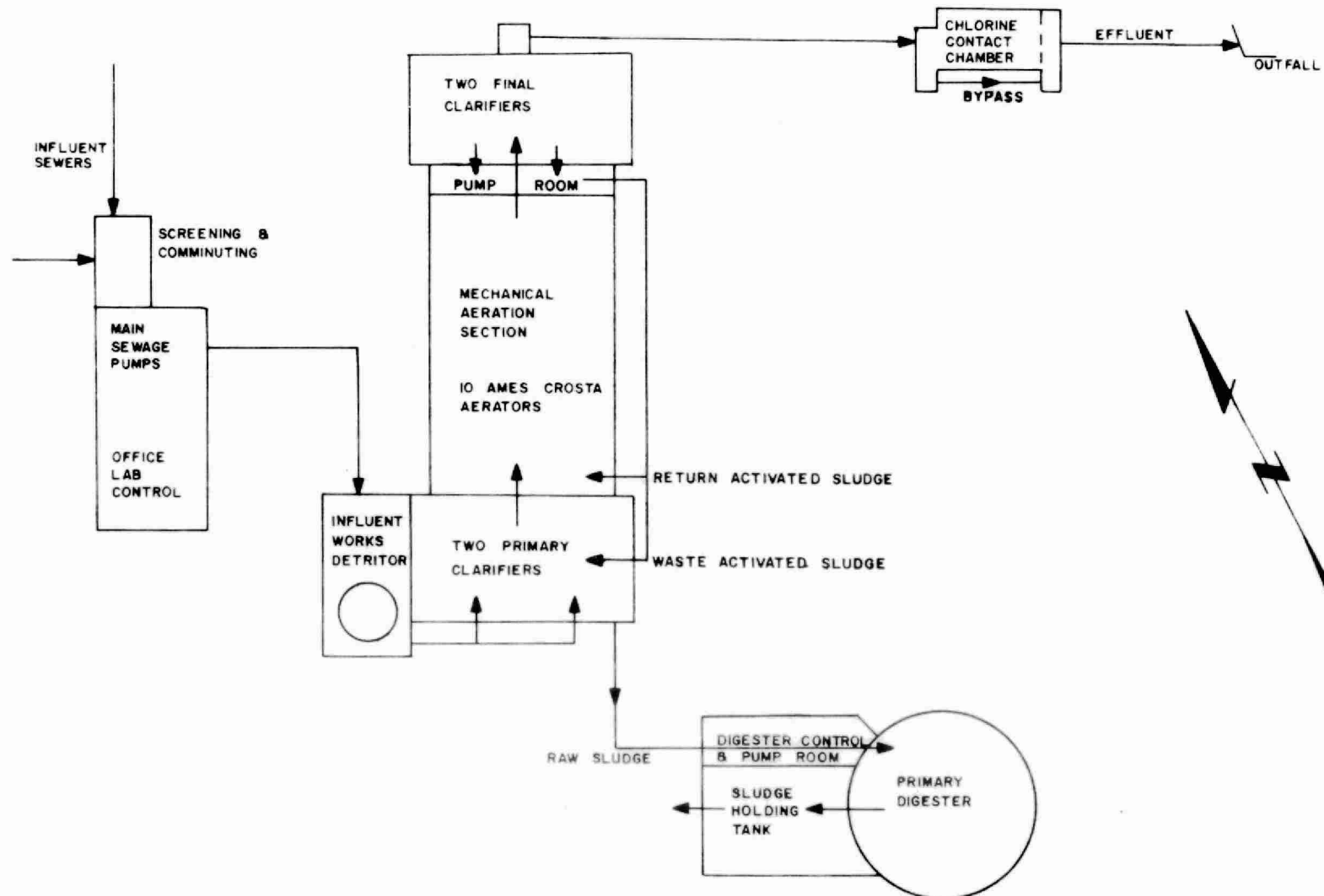
prepared by  
Plant Performance Unit  
TECHNICAL SERVICES BRANCH  
T. Cross, Director



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# TOWN OF GEORGETOWN WPCP



## DESIGN DATA

PROJECT Town of Georgetown WPCP

PROJECT NO. 2-0017-58  
TREATMENT Activated Sludge  
DESIGN FLOW 1.50 mgd  
DESIGN POPULATION 15,000  
BOD - Raw Sewage 200 mg/l  
- Removal 95%  
SS - Raw Sewage 200 mg/l  
- Removal 95%

### PRIMARY TREATMENT

#### Screening

Type: Manually cleaned bar screen  
Size: 3/4" spacing

#### Comminution

Type: C. P. Barminutor  
Size: One Model C (24")

#### Sewage Lift Pumps

Type: Chicago Pump  
Size: Two 2,900 gpm @ 60' tdh

#### Grit Removal

Type: Dorr Type WA Detritor  
Size: One 12' x 12' x 1' 3" (1,120 gal)  
Retention: 1.1 min

### Primary Sedimentation

Type: Dorr Type A  
Size: Two 35' x 35' x 10' swd  
(24,500 cu ft or 153,000 gal)  
Retention: 2.5 hours  
Loading: Surface, 612 gal/ft<sup>2</sup>/day  
Weir, 5,360 gal/ft/day

### SECONDARY TREATMENT

#### Aeration Tanks

Type: Mechanical aeration; single-pass  
Size: Two 112' x 28' x 13.25' (79,400  
cu ft or 0.495 mil gal)  
Retention: 7.9 hours

#### Aerators

- Eight Ames-Crosta

### Secondary Sedimentation

Type: Dorr Type AZ  
Size: Two 40' x 40' x 10' swd (32,000  
cu ft or 200,000 gal)  
Retention: 3.2 hours  
Loading: Surface, 470 gal/ft<sup>2</sup>/day  
Weir, 4,700 gal/ft/day

### CHLORINATION

- One W & T 200 lb/day

### Chlorine Contact Chamber

Size: One 45' x 15' x 6' deep (27,000 gal)  
Retention: 26 min

### OUTFALL

- to Silver Creek

### SLUDGE HANDLING

#### Digestion System

Type: Two-stage

#### Primary --

Type: Dorr draft tube mixers (3) on  
fixed steel roof  
Size: One 66' dia x 22.6' (avg) (77,800  
cu ft or 485,000 gal)  
Loading: 1.1 lb/cu ft/mo

#### Secondary --

Size: One 34' x 34' x 16.25' (20,700 cu  
ft or 129,000 gal)  
Total Loading: 0.87 lb/cu ft/mo

# ANNUAL COSTS

## 1973 OPERATING COSTS

● SALARIES & WAGES	37 %
● EMPLOYEE BENEFITS	2 %
● TRANSPORTATION & COMMUNICATIONS	2 %
● SERVICES	28 %
● SUPPLIES & EQUIPMENT	31 %
● AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	NIL
● TRANSFER PAYMENTS	NIL
● OTHER TRANSACTIONS	NIL

## YEARLY OPERATING COSTS

YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G.	¢/lb BOD
1968	539	\$ 43,308	80	11
1969	478	48,582	102	16
1970	597	49,195	82	9
1971	552	55,812	101	12
1972	622*	65,461	105	12
1973	767*	87,987	115	10

\* Estimate

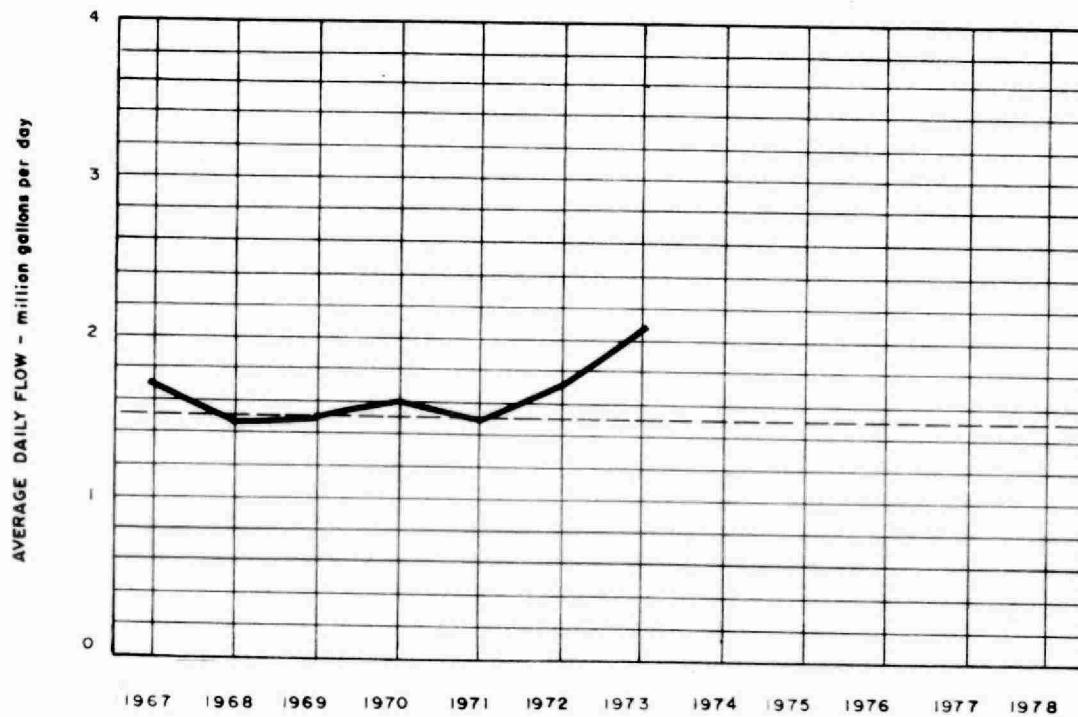
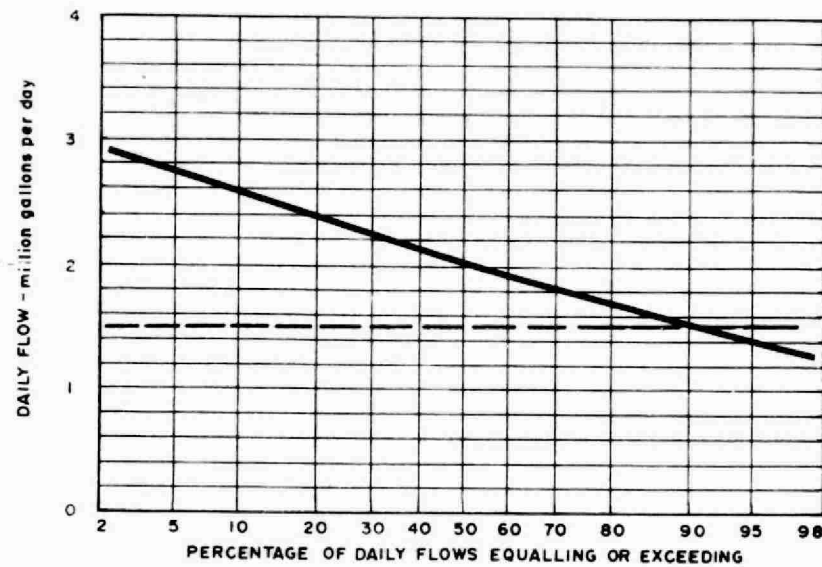


## OPERATING EXPENDITURES

SALARIES AND WAGES	<u>\$32,718</u>
EMPLOYEE BENEFITS	<u>1,690</u>
TRANSPORTATION & COMMUNICATIONS	<u>1,504</u>
SERVICES	<u>24,986</u>
SUPPLIES AND EQUIPMENT	<u>27,089</u>
ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	<u>0</u>
TRANSFER PAYMENTS	<u>0</u>
OTHER TRANSACTIONS	<u>0</u>
TOTAL	<u>\$87,987</u>

# PROCESS DATA

## FLOWS



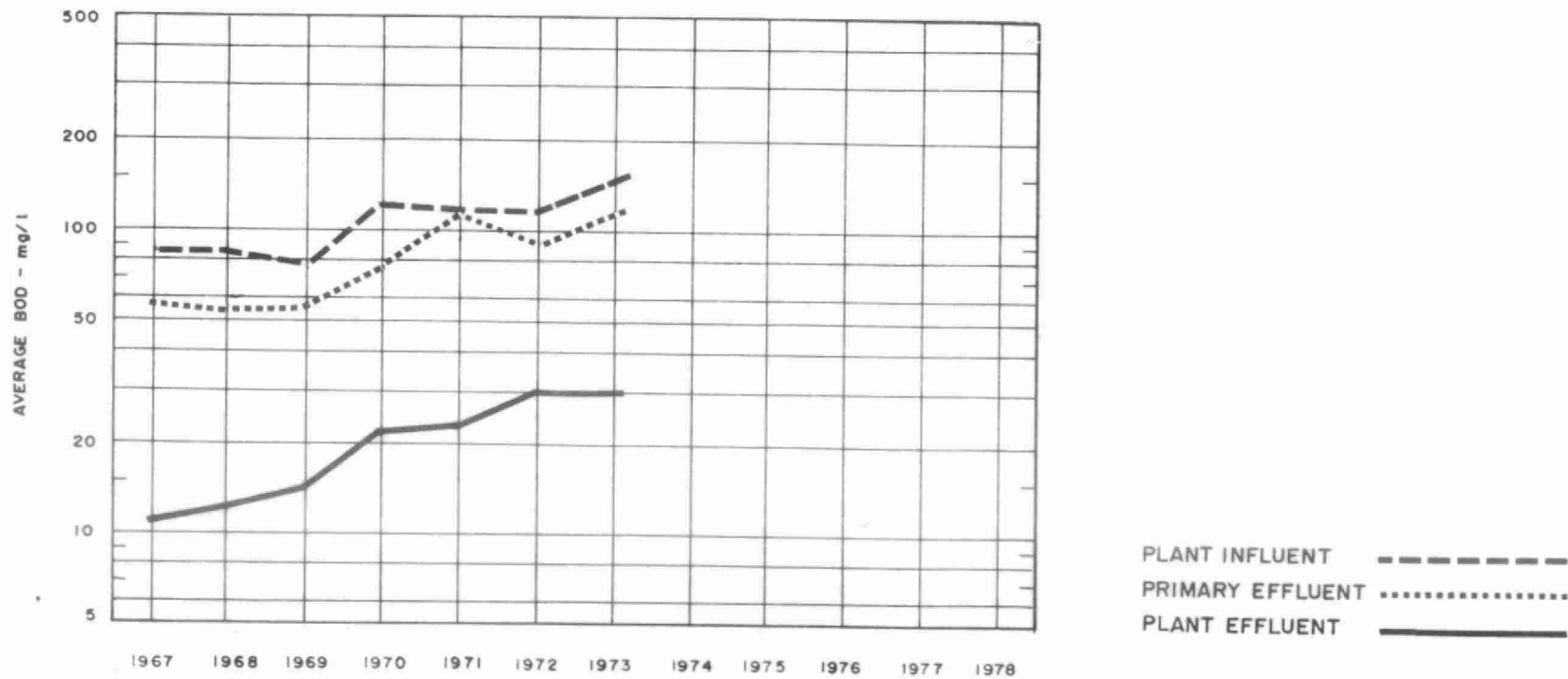
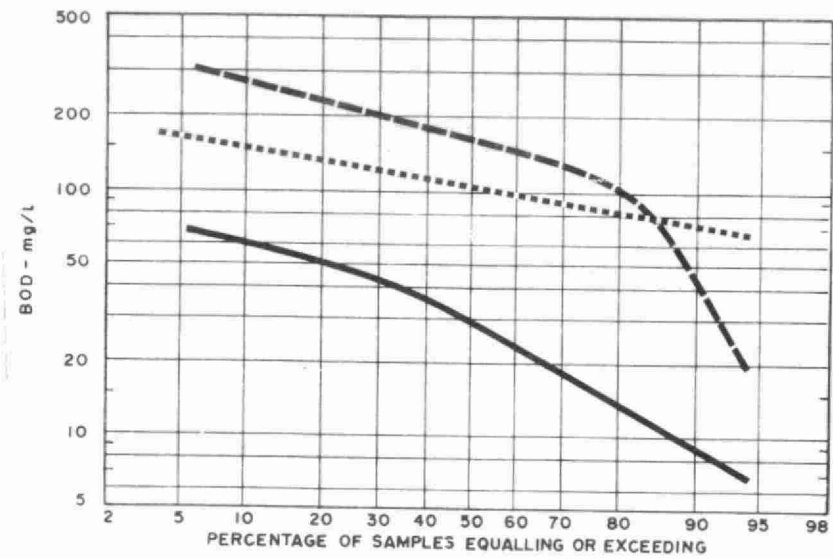
DESIGN CAPACITY - - - - -

## PLANT PERFORMANCE

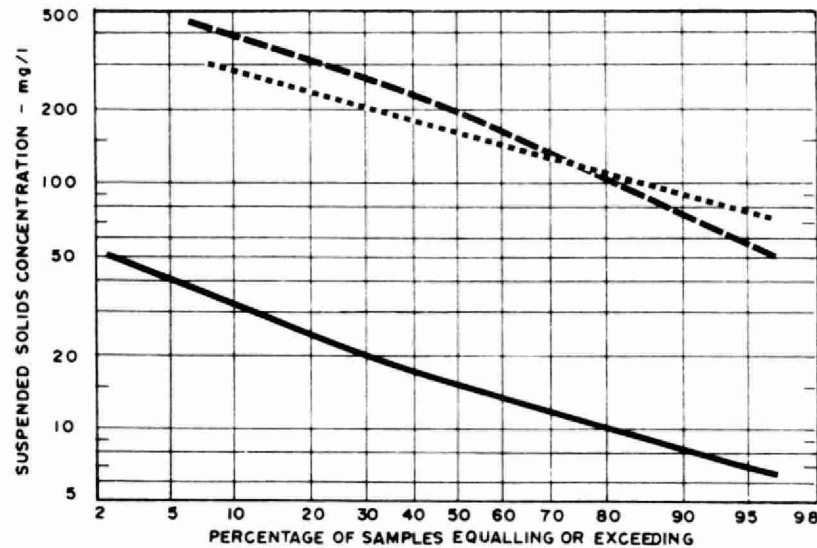
MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 <sup>3</sup> pounds	mg/l	mg/l	%	10 <sup>3</sup> pounds	mg/l P	mg/l P
JAN	61.6	2.0	2.8					160	11	93	91	9.7	4.8
FEB	72.4	2.6	3.3	20	8	60	8.6	130	12	91	88	8.4	3.4
MAR	83.0	2.7	3.2	240	36	85	16.0	190	9	95	150	6.3	2.6
APR	76.2	2.5	2.8	120	12	90	82.0	180	17	90	120	7.6	2.9
MAY	72.8	2.3	2.7	140	24	83	84.0	300	12	96	210	7.8	2.1
JUNE	57.3*	1.9	2.9	160	30	81	72.0	250	19	92	130	9.3	4.1
JULY	53.3*	1.7	1.9	180	42	77	74.0	180	12	93	89	6.4	3.6
AUG	51.8	1.7	2.1					210	13	97	100		
SEPT	41.7*	1.4	1.7	180	38	79	53.0	200	20	81	68	8.2	3.5
OCT				180	31	83		320	28	91		7.8	2.6
NOV				94	48	49		220	48	78		5.7	3.6
DEC	55.6	1.8	2.5	120	15	88	58.0	160	30	81	71	6.6	2.9
TOTAL	766.5*	-	-	-	-	-		-	-	-		-	-
AVG.		2.1	MAXIMUM 3.3	150	30	80	74.0	200	17	92	112	7.6	3.2
No. of Samples	-	-	-	17	17	-	-	78	33	-	-	18	18

\* Estimate

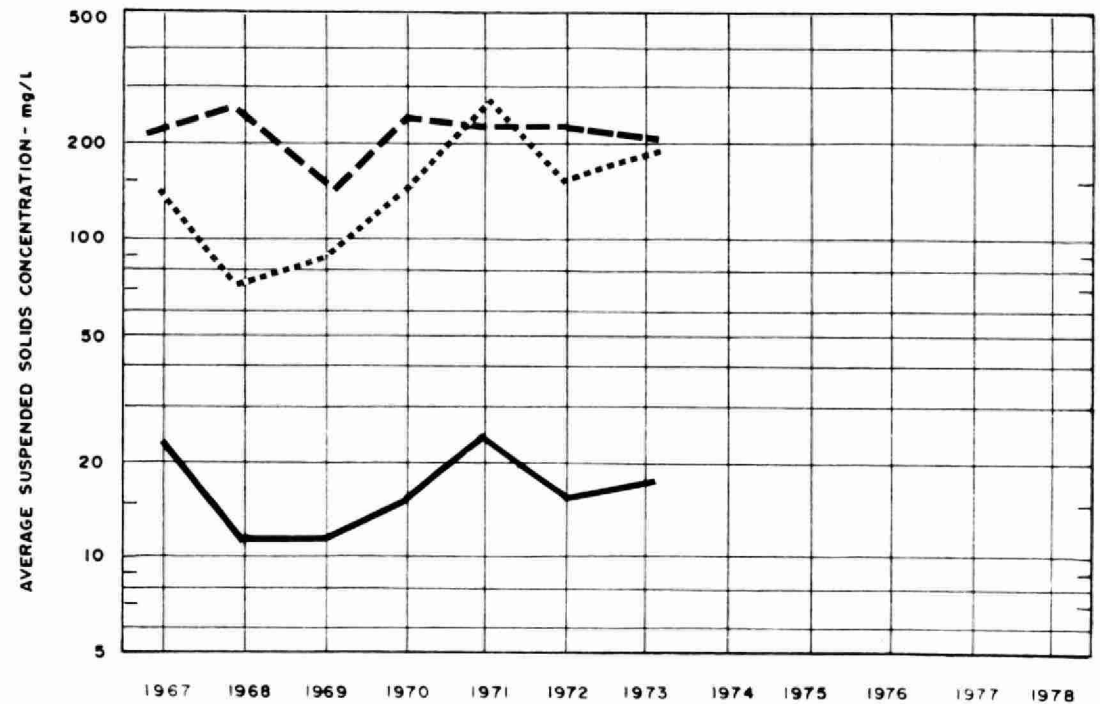
# BIOCHEMICAL OXYGEN DEMAND



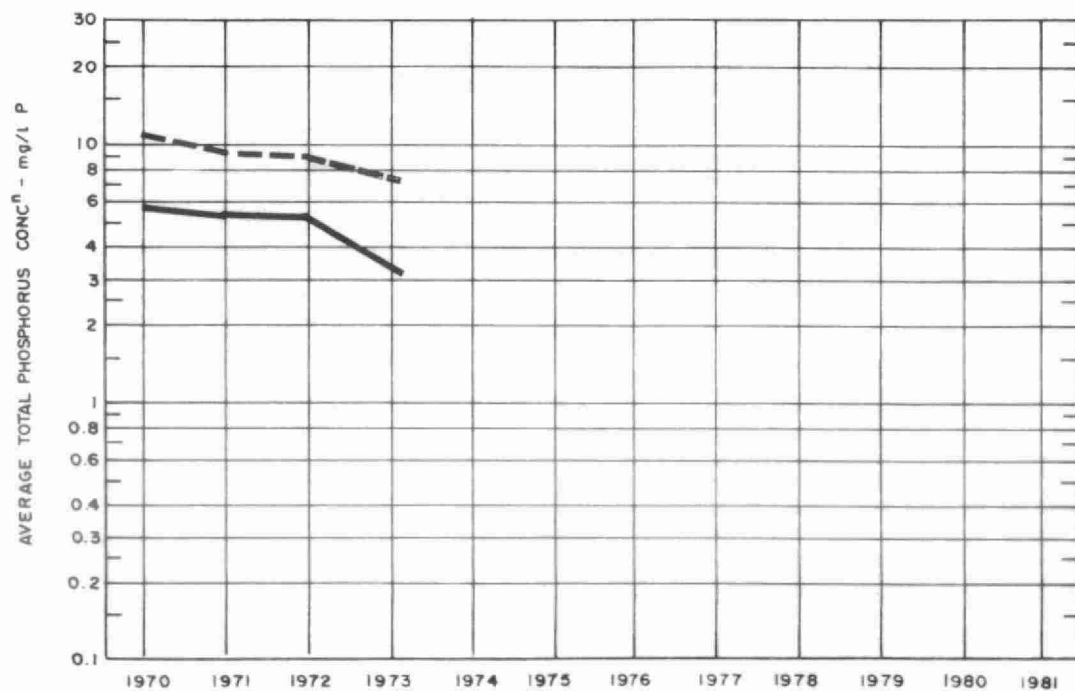
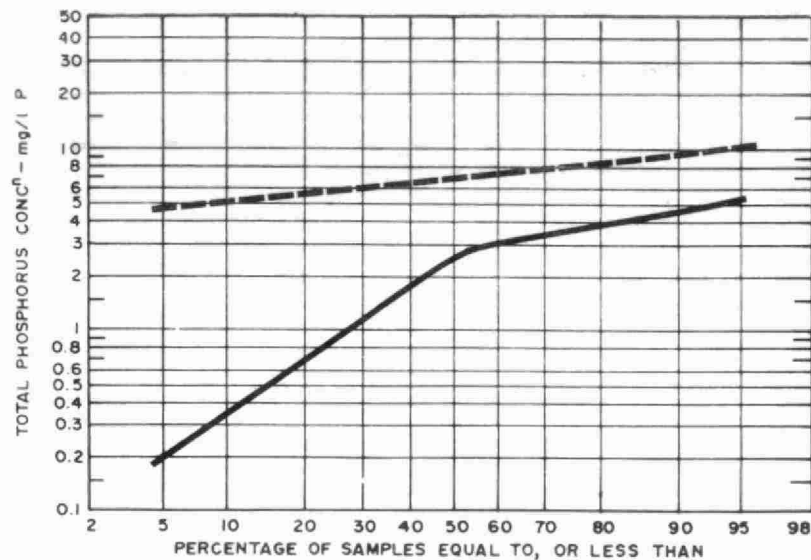
# SUSPENDED SOLIDS



PLANT INFLUENT        
 PRIMARY EFFLUENT      
 PLANT EFFLUENT     



# PHOSPHORUS



PLANT INFLUENT -----

PLANT EFFLUENT —————

## TREATMENT DATA

MONTH	GRIT	CHLORINATION		PRIMARY EFFLUENT		AERATION			SLUDGE DIGESTION and DISPOSAL							
	QUANTITY REMOVED cubic feet	CL <sub>2</sub> USED 10 <sup>3</sup> pounds	AVG. DOSE mg/l	BOD mg/l	SUSPENDED SOLIDS mg/l	MLSS CONC mg/l	F/M day <sup>-1</sup>	AIR 1000 ft <sup>3</sup> lb BOD	RAW SLUDGE			DIGESTED SLUDGE			SUPER-NATANT T. S. %	AMOUNT HAULED cubic yards
									QUANTITY 10 <sup>3</sup> gallons	TOTAL SOLIDS %	VOL. SOLIDS %	QUANTITY 10 <sup>3</sup> gallons	TOTAL SOLIDS %	VOL. SOLIDS %		
JAN	43	1.8	2.9		340	1900			67	7.3	36		2.3			880
FEB	61	1.7	2.3	100	150	1900	0.27		200	6.8	40		3.8			1715
MAR	74	1.7	2.1	100	180	1000	0.23		160	9.5	43		4.7			538
APR	61	1.5	2.0	95	160	2400	0.19		63	13.6	52					1109
MAY	136	2.5	3.5	120	180	2000	0.28		21	12.1	59		2.7	55		483
JUNE	21	2.2	3.8	130	150	1800	0.26		132	10.2	44					2534
JULY	18	2.5	4.8	110	130	2000	0.18		153	6.5	32					315
AUG	30	1.8	3.6		230	1900			139	6.6	42					117
SEPT	33	1.8	4.9	140	140	1700	0.22		137	6.3	40		4.8			1835
OCT	35	2.1		100	190	2087			141	5.9	37					1142
NOV	45	2.0		95	180	2200			22	8.5	43					732
DEC	42	1.8	3.2	130	160	2700	0.16		72	11.7						1054
TOTAL	599	23.4	-	-	-	-	-	-	1307	-	-		-	-	-	12454
AVG.	0.8 cu. ft/mi gal	2.0	3.1	110	180	2000	0.22		109	8.8	43		3.7	55		1038

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